

APPENDIX G

SWAB EUE VERIFICATION PLAN

SWAB EUE SYSTEM ENGINEERING and VERIFICATION PLAN

The SWAB SRD is developed from a HRF common template where the requirements are flown from different sources. In addition to the structure of the SRD, the requirements are broken into functional groupings such as:

- Functional Requirements
- Technical Specifications
- Safety Requirements
- Quality, Reliability and Workmanship Specifications
- Interface Requirements / Human Factors
- Other functional requirements

Functional Requirements

Specific functional requirements imposed on the HRF ASD flow from the SWAB Experiment Document (LS-20444-E049). The ED provides a vehicle for Principal Investigators (PIs) to formally specify the requirements for performing their experiments.

Technical Specifications

The technical specification requirements imposed on the HRF ASD flow from the SWAB ED as well as the HRF program level document LS-71000. These technical specifications exhibit more detailed functionality requirements for the device.

Safety Requirements

Safety requirements, which flow from NSTS 1700.7 (current rev and Addendums) are common for all payloads however, each hardware will have specific safety verifications, which are tracked through the SVTL and processed by the PSRP.

Quality, Reliability and Workmanship Specifications

Quality, Reliability and Workmanship requirements are required to verify that sound products are being designed and built to latest quality standards. These requirements flow from HRF program level document LS-71000A.

Verification Requirements

Verifications represent the majority of the HRF ASD requirements. These requirements flow from the HRF program level document LS-71000A/SSP57000E Specific applicability matrix.

ISS Module Requirements

Because the experiment will be conducted on all ISS modules and launch vehicles for BDCs, there will be requirements that are applicable that flow down from Space Transport System (STS) set of guidelines which most flow from NSTS-21000-IDD-MDK, the Shuttle Middeck Interface Definition Document. Russian Segment Requirements have evolved from agreements between our Russian counterparts. Columbus and JEM module requirements are included in SSP57000.

All of the requirements were baselined into the SWAB System Requirements Document (LS-20444-1) which also included the verification plan roll out for these requirements. Closure of the SWAB ISS requirements in the SWAB ISS MOA (which will become a part of the HRF Rack 1

ICD - SSP 57200) is the responsibility of HRF and will be coordinated with OZ3. Closure of the SWAB STS requirements in the SWAB STS MOA is the responsibility of HRF and will be coordinated with OZ2. The verification plan has been broken down into the following:

SSP 57000E / SSP 57200 Requirements

- 80 Applicable Requirements
 - 43 Mechanical (ME & HFE)
 - 9 Electrical (EL)
 - 7 Structural (ST)
 - 0 Command and Data Handling (CD)
 - 10 Safety
 - 6 Environmental (EN)
 - 2 Materials and Process (MP)
 - 3 Fire Detection (FD)

NSTS-21000-IDD-MDK Requirements

- 20 Applicable Requirements
 - 1 Mechanical
 - 1 Electrical
 - 4 EMC
 - 4 Structural
 - 4 Environmental (EN)
 - 6 Thermal

SSP 50094 ISS Russian Segment Requirements

- 1 EMC